# HEALTH IMPACT ASSESSMENT IN URBAN DEVELOPMENT: MODEL APPROACH, POTENTIALS AND LIMITATIONS FOR THE SYSTEMATIC INTEGRATION OF HEALTH ASPECTS IN URBAN PLANNING PROCESSES. CASE STUDY GERA, GERMANY (1094)

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**Abstract.** This paper addresses the increasing importance of integrating health aspects into urban development, particularly in light of environmental impacts and the COVID-19 pandemic. The paper focuses on the Health Impact Assessment (HIA) as a tool to assess the potential health effects of policies, programmes and projects. It explores the integration of HIAs into the German administrative structure and urban development processes, with a specific case study of an urban development framework plan.

The paper presents a model that systematically integrates health aspects into urban planning and discusses the roles and tasks of public health services and urban planning departments in the HIA process. It also considers the potentials and challenges of implementing HIAs in municipal administrations in Germany and their contribution to urban resilience. The paper concludes with recommendations for supplementary tools and emphasizes the need to adapt HIAs to specific planning tasks and local contexts.

**Keywords:** health impact assessment, urban planning, public health sector, urban development, urban resilience.

## 1. Initial situation and issue of the paper

Environmental impacts, such as increasing heat periods and other climate-related changes, noise, air pollution or land consumption, lead to impairments of human health, so that integrated urban development, which also takes health aspects into account, is increasingly in focus. Recently, the Covid 19 pandemic and its direct and indirect consequences have made the issue of health promotion in urban development more important. Municipalities are confronted with the challenge of integrating health aspects

more intensively in the various areas of urban planning and development. In order to be able to implement this in the long term and sustainably, health-relevant framework conditions must be recognized and promoted accordingly through programmes and projects (Elvers, 2017, p. 13). A variety of areas of urban development, such as the built environment, green structures, transport and the economy, which are beyond the health sector, have a direct or indirect influence on health determinants as well as the living environments of urban residents (Fehr et al., 2014, p. 93; WHO, 2017). Furthermore, another long-term challenge is to create conditions that enable all city dwellers to participate in social life and access health services, regardless of their social status. These findings and requirements have prompted the WHO to formulate the Health in All Policies approach as a goal, understood as a strengthened cross-thematic, health- and society-oriented policy. This was already defined in outlines in the Ottawa Charter on Health Promotion of 1986 (WHO, 2014 pp. 7-8; Stahl et al., p.27).

A tool that addresses and attempts to solve the aforementioned challenges of communities is the Health Impact Assessment (HIA). This comprises a "combination of procedures, methods and tools by which a policy, program or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population" (WHO, 1999, p.4). The goal of HIAs is to consider health aspects in various policy and action areas, including urban development. HIAs thus support the Health in All Policies approach (WHO, 2023c). The application of HIAs is intended to help establish healthy living environments for urban dwellers as well as to maintain them in the long term (WHO, 2023b). HIAs have been used and implemented in numerous regions and countries worldwide since the early 2000s, for example in Australia, East Asia, the Pacific, North America, and Europe. In the European and North American context, various guides, checklists or recommendations for action already exist for practical application (Winkler et al., 2014 pp. 1-2).

Although there are legal arrangements and foundations in Germany that enable the application of the HIA and the participation of public health actors, these take place in urban development projects only sporadically and without a defined agreement regarding the procedure, methodology and applied instruments (Mekel, 2015, p. 8).

Given this context, this paper explores the following research questions:

- How can a model look like that systematically integrates health aspects in urban planning programmes and projects?
- How can this model be effectively integrated into the German administrative structure and typical administrative procedures of urban development processes and the public health sector?
- What are the possibilities and limitations for practical application?

The interdisciplinary research project “GFA_Stadt: Gesundheitsfolgenabschätzung in der

Stadtentwicklung" (HIA_City: Health Impact Assessement in Urban Development; https://www.gfa-stadt.de/) serves as research background. The research project was funded by German Federal Ministry of Education and Research (BMBF; grant number 13FH021SB8). The research questions are discussed both in terms of typical planning procedures in Germany and on the basis of the case study of the urban development framework plan "Neighbourhood Centre Lusan" in the eastern German municipality of Gera. The main objective is to systematically link the instrument of HIA with the help of the developed model utilizing the usual procedural steps of urban planning in order to take health concerns more into account in planning and to establish a structured cooperation between public health services and urban development. Methodologically, the paper is based on guided interviews, expert workshops with actors from science, professional institutions and municipal administration, site visits, household surveys, extensive literature and document analyses as well as the case study on the framework plan of the Lusan district of the East German City of Gera.

Finally, the article summarizes the potentials and challenges of implementing the HIA in municipal administrations in Germany, especially in urban planning and public health departments. It also reflects on the extent to which the instruments can contribute to urban resilience.

## 2. Health Impact Assessment and walkability in urban development

In urban development, HIA is to be understood as an instrument or practice that deals with programmes, measures and projects that are expected to have impact on health in cities, but are taken outside the actual health sector (WHO, 1999, p. 1). The WHO defines HIA as a tool that can be used to assess potential health impacts, particularly on disadvantaged or vulnerable target groups, of development projects in various thematic areas, and to help policy makers and planning actors enhance expected positive impacts while minimizing negative health effects (WHO, 2023c). Successful HIA can directly and indirectly influence health determinants as well as the living environments of urban residents. According to the WHO (WHO, 2017), these include:

- the social and economic environment,
- individual characteristics and behaviours of a person,
- the design of a person's physical environment.

The health determinants are also influenced by factors such as place of residence, condition of the physical living environment, income and social status, level of education and social support networks (WHO, 2017). The aim is to increase opportunities for social participation and a healthy and fulfilling life, as well as to reduce social disparities (WHO, 2023d). To achieve this, changes are required on at least two levels: a rethinking of the

perception of health is essential in urban planning, and health services must be enabled to take a well-founded position in the urban development process and to be able to introduce health issues (Elvers, 2017. pp. 13,15). Currently, there is no binding, standardised method for conducting an HIA. However, a general structure with several stages has emerged, which basically include the steps screening, scoping, appraisal, reporting and monitoring activities and are partially combined (WHO, 2023c).

An important component for the integration of HIAs in urban development processes is the promotion of walkability. By planning and developing urban neighbourhoods and districts according to the approaches of movement promotion (walkability), health-promoting urban structures and living environments can be created. The following factors are relevant for the creation of such urban neighbourhoods that promote physical activity (Lo, 2009, p.154; Buksch and Schneider, 2014, p. 20):

- existing, continuous and well-maintained pedestrian and cycle paths of sufficient width,
- a narrow, well-connected network of paths,
- the safety of traffic routes as well as crossings,
- the absence of high-speed traffic or strict separation of pedestrian and cycle traffic from motor traffic,
- diversity, mix and increased density of building and land uses,
- an aesthetically attractive and varied environment; and
- reasonable distances to relevant, high-quality destinations in the neighbourhood, such as green spaces, public transport stops or shopping facilities.

## 3. Model: integration of the HIA into urban planning processes

The typical phase model developed within the framework of the HIA_City research project contains a procedure for cooperation between public health services and urban planning, and systematically links the HIA with the procedural steps of urban planning. The research team developed this model based on interviews and examined it in the case study “framework plan ‘Neighbourhood Centre Gera-Lusan’“ (see chapter 4). The purpose is to integrate the instrument into existing standard procedures of urban planning in an effective and resource efficient way. This should lead to standardisation and provide the administration with a uniform model of such interdepartmental cooperation. Furthermore, a recommendation is given on the distribution of tasks and roles of the actors of the public health services and the urban planning department in the process of HIA development. The developed typical model for the integration of an HIA in urban development projects and processes envisages three strands (Figure 1).

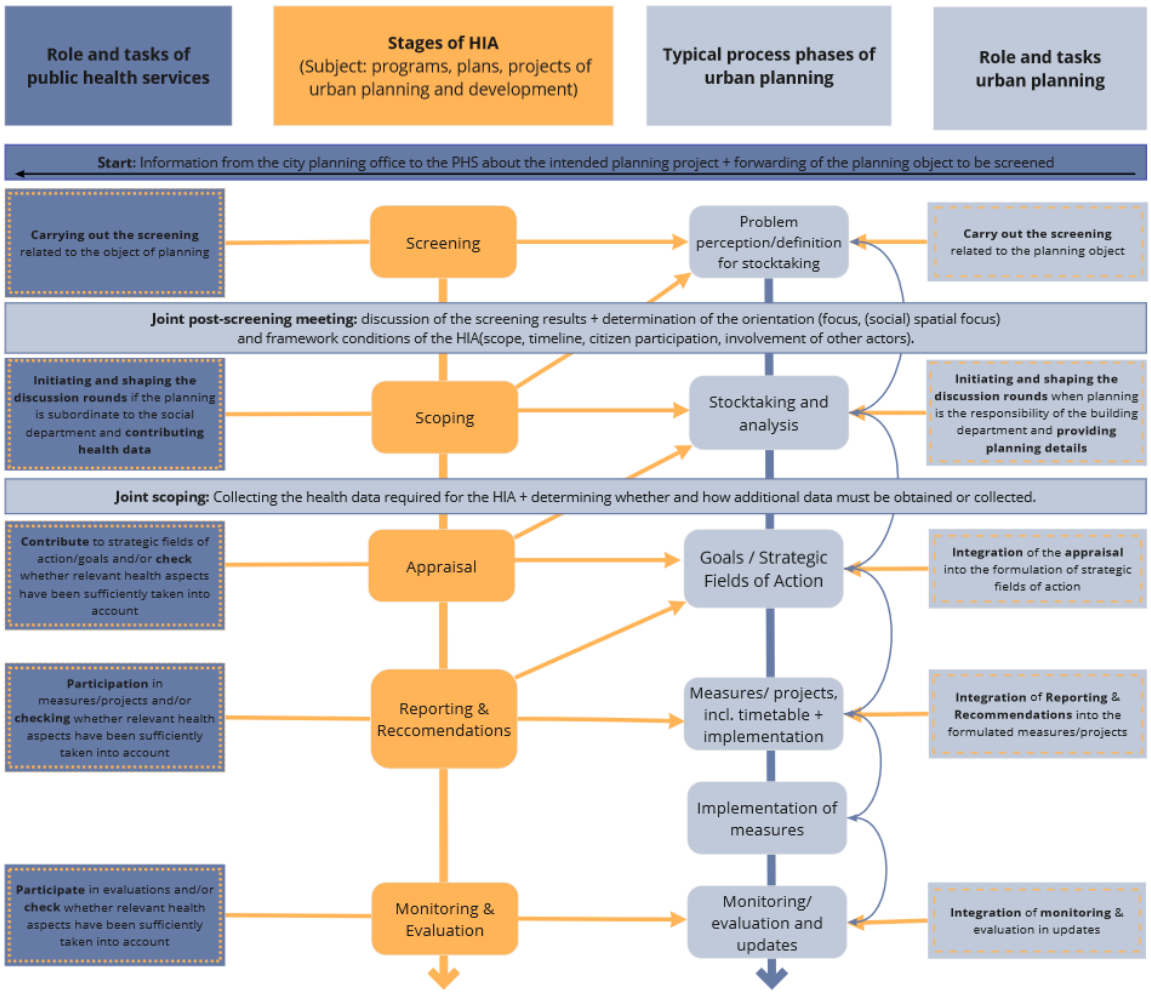


Figure 1. Stage model of a health impact assessment (HIA) integrated into urban planning

- The five stages of the HIA (orange) in conjunction with the typical process stages in urban planning and development (grey), as envisaged for different planning procedures, form the centre point. This typical sequence of HIA phases in combination with planning phases can be applied to different informal and formal urban planning and development procedures.
- The left strand (blue) shows the roles and possible tasks to be performed by the public health service and its actors in the individual phases of the model of a health impact assessment integrated into urban planning.
- The right-hand side (grey) shows the roles and tasks of urban planning, which are to be carried out or assumed by the implementing actors in the individual process phases of a project.

The typical process for the practical application of the model proceeds as follows:

- The HIA is initiated by the urban planning department informing the health department that a planning project is starting. For this purpose, ideally an advance phase of problem perception or definition is carried out for the inventory. This could be necessary, for example, if a development or neighbourhood concept is to be updated because new or changed problem situations have emerged.
- The initial stage takes place in parallel with the screening of the HIA, i.e., the sifting or preliminary examination of health-related impact contexts. The role of the public health department is to provide existing health data and to identify interrelationships from a health perspective. In the preliminary assessment, the health department takes on an accompanying role and is in an open dialogue with the urban planning department. The screening phase concludes with a decision as to whether a further HIA is expedient and should be implemented.
- In the next step of the planning process, roles and framework conditions as well as responsibilities and procedures of the HIA are defined. Joint discussion rounds are held with stakeholders from the health sector and the relevant planning administrative units, and it is agreed who is to be involved in the further process and how. For example, the environment and/or social services departments can also be involved.
- With the scoping process, a joint assessment takes place with regard to relevant health aspects. The results of the scoping are in turn incorporated into the stocktaking and analysis of the planning process. In this stage, it must be determined which additional health aspects and data bases are to be collected and considered in the subsequent analysis.
- In the appraisal or analysis phase, the collected health data and impacts are compiled and evaluated. This analysis and its results flow into the planning phase, which formulates the relevant, strategic fields of action and objectives of the planning project. At this point, the public health services are responsible for reviewing the formulated fields of action and included objectives, and to what extent they contribute positively to an improvement of the health determinants of the target groups concerned.
- The reporting and recommendation phase includes the task of the Public Health Service to review and ensure the predefined project objectives and fields of action. For this purpose, the planned measures should be examined with regard to their effect on the consideration and improvement of health aspects. If the formulated objectives are not achieved, suggestions for improvement should be made, which are then to be integrated into the planning by the urban planning department.
- The two elements of the final stage of the HIA, monitoring and evaluation, begin as soon as the planning project has been implemented. These provide for a review by

the public health services, which will determine whether and to what extent the project has achieved positive health promotion. The experience gained can be used in further applications of HIA and the improvement of the present typical model.

In order to ensure the presented model as well as its integration into the German planning routine, supplementary tools have been provided, which are listed below:

- A website that can be used as a common platform for information and documents on the topics of planning and health (e.g., relevant spatial data or interactions between health and physical activity).
- A health checklist to help identify planning procedures, development concepts or projects that are prioritised to promote health aspects, with special attention to the impact on disadvantaged groups with the help of a HIA.
- By using the HEAT questionnaire, impact relationships between health and physical activity can be presented transparently (WHO, 2023a).
- As a participation tool, the StadtRaumMonitor (City-Space-Monitor), which was developed by a German research project and is based on the Scottish Place Standard Tool, can be used to assess places in terms of health in order to additionally consider the residents' perspective (Bundeszentrale für gesundheitliche Aufklärung, n.d.).

This typical model for the integration of HIA into urban planning practice in Germany forms an orientation framework that can serve to increase the consideration of health aspects in urban development programmes and projects. However, its application must always be adapted to the specific planning project, as the initial situation, the target groups concerned, and the internal administrative structures and processes may differ from municipality to municipality.

## 4. Case Study framework plan “Neighbourhood Centre Gera Lusan“

The research project HIA_City examined the HIA exemplarily on walkability (promotion of physical activity) in cities and the associated health effects on residents in neighbourhoods. Specifically, this is being researched using the selected case study of the urban development framework plan "Neighbourhood Centre Gera-Lusan". There, it is examined how a HIA can be implemented in urban planning and how walkability affects the quality of life and health of the residential population in the neighbourhood. The district of Lusan in the City of Gera has been a programme neighbourhood of the German Socially Integrative City funding programme since 2015. In this way, the federal government and the state of Thuringia support the stabilisation and upgrading of urban, economically and socially disadvantaged and structurally weak urban and local districts. In the context of the integrated development concept for Gera-Lusan, the structurally weak district characterised by prefab housing estates primarily derives requirements for

action to improve the living environment and promote health (Buhtz, Gerth, Marsch, 2017). The target group for the application of the HIA to the "Neighbourhood Centre Gera-Lusan" framework plan are the actors of the municipal administration as well as the local resident population. The focus of the study is to improve the quality of life and health of the entire resident population. Special attention is paid to older people, people with physical disabilities and the socially disadvantaged. Since the political turnaround in 1990, the city of Gera (about 93.000 inhabitants, 2022) has experienced a steady population decline (minus 18,6% since 2000), with a simultaneous decrease in the proportion of young age groups and a steady increase in the proportion of older age groups (Buhtz, Gerth, Marsch, 2017).

The framework plan under consideration covers the approx. 10.5-hectare area of the former district centre with brownfield sites, retail and commercial areas as well as an educational institution, the development of which is to be prepared taking into account private and urban interests. The stated objective of the framework planning is to harmonise the activities of the developer, a non-municipal investor, with other private as well as municipal interests, and to coordinate the various ideas and approaches for effective site development. The commissioned private planning office has the task to provide possible variants of site development in the framework planning that are both flexibly designed and contribute to activating the site.

The HIA to be conducted with regard to the framework plan should take special account of the walkability of the urban planning and design environment of the neighbourhood. This is because the built environment affects the walkability in many ways and thus has significant health consequences. Adaptations in the immediate living environment can increase the ease of movement and improve health conditions - especially for an ageing urban society. The process of testing the HIA for the framework plan is shown in Figure 2.

For the application of the HIA model to the case study Gera-Lusan, a web-based screening tool developed within the research project was used and tested. The involved actors of the urban planning and health department were asked to give their assessment of the possible impacts of the planning project on different topics (e.g., mobility and accessibility quality, public open spaces, environment and health, ...). The assessment yielded the following results:

- Issue a comprehensive screening report. This contains the recommendation for conducting a further HIA to consider health aspects in the further planning process, due to expected impacts in different thematic areas.
- The report is supplemented by comments and remarks from the stakeholders. These reveal differences in the perception and assessment of possible health-relevant impacts by the various stakeholders.

- Results of the screening as well as the formulated assessments of the urban planning and health department are discussed in detail in a subsequent post-screening discussion round. Other municipal and local actors, such as the environmental and social authorities and housing companies, should be included in this discussion.
- Preparation for the subsequent scoping process should be initiated. For this purpose, existing data from the participating authorities should be collected in order to be able to carry out a detailed analysis and assessment in subject areas in which health-relevant impacts are to be expected. Furthermore, it is to be determined which additional data are to be collected.
- In the context of the application process, a successful activation and promotion of inter-communal cooperation and networking between the involved actors of the urban planning and the health department is of high relevance to guarantee


integration.

Figure 2. Integration of HIA into urban planning, case study of the “Neighbourhood Centre Lusan” framework plan

For the adaptation of the HIA phase model, the findings from the practical application as well as the feedback from the stakeholders involved are to be used.

## 5. Potentials and challenges of the model – an interim summary

The empirical research in the HIA_City research project shows that the integration of an HIA into urban planning and development, such as the preparation of the framework plan "Neighbourhood Center Gera-Lusan" shows synergies for the departments involved which are supportive for both sides. This applies, for example, to the protection and development of green and blue infrastructure, questions of movement promotion (walkability) or urban infrastructures in the area of local recreation and leisure. Existing legal regulations for strengthening healthy cities, such as the German Building Code or the German Law on Prevention, emphasise the need for an integrative approach in planning projects. With the help of HIAs, fields of action with the aim of developing healthy, liveable cities and neighbourhoods can be given higher priority, and health impacts are given greater transparency in development projects. This could contribute to shifting priorities in local politics towards health-promoting urban planning and Health in All Policies, as well as supporting the implementation of corresponding concepts and measures. Especially under the massively changing conditions, such as climate change, demographic developments, increasing social, health-related and environmental disparities, the importance of health prevention and promotion is growing and with it the need for implementation.

Limitations of the HIA occur when relevant health aspects are already taken up and highlighted in other sectoral planning as part of the investigations. An example are existing environmental assessment procedures that are firmly anchored in law and take into account the conservation and protection of the protected common goods air, water, soil and human health. The HIA procedure and instrument may be perceived as less relevant, obsolete or even unnecessary additional planning effort if health aspects are already illuminated and considered in connection with other topics relevant to urban development, albeit not in the intended systematic manner.

However, there is no existing legal basis that obliges the consideration of potential health impacts, both positive and negative. There is a risk that health aspects will be given less importance in the consideration process than problems and challenges that are perceived as more urgent, such as the need for housing. In addition, employees and actors of the public health service are often overburdened with planning projects and

the associated questions, formulations, technical terms used and workflows, which limit the effectiveness of a HIA. This is further complicated by the lack of will on the part of decision-makers, staff and resource bottlenecks, as well as the lack of financial means to train administrative staff in the context of education and training programmes in such a way that HIA can be successfully applied in everyday planning.

Further obstacles arise from different approaches and procedures in the various administrative departments, which require a high degree of communication skills and interface work in the context of an interdisciplinary and integrated HIA. In addition, different understandings of health among the actors, and questions of professional qualifications represent further obstacles, as a result of which health-related concerns in urban land use planning are often given little argumentative support and are not heard enough.

## 6. Discussion

This paper deals with the instrument HIA for promoting health issues in urban planning and development. It examines the transferability of a typical model for integration into everyday planning in Germany on the basis of a case study on the urban development framework plan " Neighbourhood Centre Lusan" in the East German municipality of Gera. In the following, both potential contributions and limitations of HIAs to the planning and development of healthy cities are discussed on the basis of three theses.

1. HIA as a practice-applied model - research as pathfinder for practice

The HIA can support the WHO's health policy strategy that health needs to be taken up in all policies and that health is brought into all areas of life of the urban population. With the help of the HIA instrument, urban development can be more closely interlinked with the health sector and cooperation can be supported in such a way that potentials for health promotion are taken up and health burdens are reduced. Furthermore, the HIA and its implementation can strengthen municipal environmental and green space authorities by providing another tool that highlights the positive effects of environmental aspects. In order to achieve this, HIAs should be systematically integrated into urban planning procedures. The model of the HIA_City research that has been presented refers in particular to the practical feasibility that can help municipalities to successfully integrate HIAs in Germany. The additional tools shown are supportive to facilitate the process and provide assistance. Here, research can make an important contribution to target-oriented integration by using existing international and national findings and incorporating them for the successful application of HIA in practice.

2. Systemic integration in administrative procedures and legal frameworks – Living lab-approach with model neighbourhoods

For the introduction of HIA in Germany, legal foundations and administrative procedural rules are necessary as conditions as well as supportive framework requirements. These should be developed and balanced by science and practice in interaction with each other. In this context, interdepartmental cooperation, in particular between the public health service, urban planning and environmental authorities, is particularly expedient. In addition to health aspects, this can also contribute to increased awareness and implementation of environmental issues that are important for climate adaptation. The model presented is based on existing procedures, strategies, instruments and concepts and is thus suitable for integration into everyday planning in Germany. The approach of the living lab with testing in sample cities makes it possible to develop knowledge that can be transferred, but at the same time identify obstacles and conditions for success to meet challenges.

3. Qualification of the departments involved and personnel resources for interface work - science and practice work hand in hand

With the HIA, politics and administration can be sensitised to health promotion, for example by providing health-related background information as part of the implementation process. Thus, the HIA contributes to political decision-making and supports that health-promoting urban development gains weight. Simultaneously, there is a need for targeted qualification of the health and urban planning authorities in order to be able to introduce health concerns into planning procedures and, conversely, to integrate health aspects more strongly into planning procedures. In the daily routine of municipal administration, the specific instruments, standards, technical terms and language of the respective offices pose a great challenge for interdisciplinary cooperation. Thus, the required qualification of the administration aims at reducing knowledge gaps and obstacles in comprehension. HIAs have the potential to serve as a motor for innovation in health-promoting urban development through a wider impact, but require the appropriate resources, personnel, time and knowledge, without which the process cannot be implemented sufficiently.

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